WHAT IS CLAIMED IS:

1. An aberration measuring method in which a light flux converged by a condensing optical system is made incident on an optical system to be measured, the light flux that has passed through said optical system to be measured is reflected by a reflecting optical system having a center of curvature at a light convergence point on a light emergence side of said optical system to be measured is made incident on said optical system to be measure again, and wavefront aberration of said optical system to be measured is detected as interference fringes using the light flux that has passed through said optical system to be measured again, comprising:

a step of setting a numerical aperture of said optical system to be measured to a numerical aperture larger than a maximum numerical aperture in a case that said optical system is actually used; and

a step of measuring wavefront aberration of said optical system at a set numerical aperture.

2. An aberration measuring method according to claim 1, wherein letting NA_0 be said maximum numerical aperture in the case that said optical system to be measured is actually used and letting NA_1 be said set numerical aperture, the following condition is satisfied:

$NA_0/NA_1 < 0.995$.

3. An exposure apparatus comprising:

a projection optical system for projecting a pattern formed on a reticle onto a wafer, a numerical aperture of said projection optical system being variable; and

an aberration measuring system including:

a condensing optical system disposed on a light incidence side of said projection optical system;

a reflecting optical system disposed on a light emergence side of said projection optical system; and

a detection optical system for detecting wavefront aberration of said projection optical system as interference fringes;

wherein said aberration measuring system causes a light flux converged by said condensing optical system to enter said projection optical system, causes the light flux having passed through said projection optical system to be reflected by said reflecting optical system having a center of curvature at a light convergence point on a light emergence side of said projection optical system to make the light flux incident on said projection

optical system again, and forming the interference fringes using the light flux having passed through said projection optical system again; and

said aberration measuring optical system sets a numerical aperture of said projection optical system to a numerical aperture larger than a maximum numerical aperture in an actual exposuring operation, and measures wavefront aberration of said projection optical system at the set numerical aperture.

4. An exposure apparatus according to claim 3, further comprising correction means for correcting the wavefront aberration of said projection optical system based on said wavefront aberration measured by said aberration measuring system.

5. A device manufacturing method comprising the steps of:

applying resist on a wafer;

exposing the wafer on which the resist has been applied using an exposure apparatus according to claim 3; and

developing said resist that has been exposed.